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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Application Number	10/770/732
Filing Date	02/02/2004
First Named Inventor	Bossard
Group Art Unit	
Examiner Name	
Attorney Docket Number	Bossard-9

Total Number of Pages in This Submission

ENCLOSURES *(check all that apply)*

- ☐ Fee Transmittal Form
  - ☐ Fee Attached
- ☐ Amendment / Reply
  - ☐ After Final
  - ☐ Affidavits/declaration(s)
- ☐ Extension of Time Request
- ☐ Express Abandonment Request
- ☑ Information Disclosure Statement
- ☐ Certified Copy of Priority Document(s)
- ☐ Response to Missing Parts/ Incomplete Application
  - ☐ Response to Missing Parts under 37 CFR 1.52 or 1.53
- ☐ Assignment Papers *(for an Application)*
- ☑ Drawing(s)
- ☐ Licensing-related Papers
- ☐ Petition
- ☐ Petition to Convert to a Provisional Application
- ☐ Power of Attorney, Revocation Change of Correspondence Address
- ☐ Terminal Disclaimer
- ☐ Request for Refund
- ☐ CD, Number of CD(s) _____
- ☐ After Allowance Communication to Group
- ☐ Appeal Communication to Board of Appeals and Interferences
- ☐ Appeal Communication to Group *(Appeal Notice, Brief, Reply Brief)*
- ☐ Proprietary Information
- ☐ Status Letter
- ☐ Other Enclosure(s) *(please identify below)*:

Remarks

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm *or* Individual name	LaMorte & Associates
Signature	
Date	8-4-04

CERTIFICATE OF MAILING

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to: Commissioner for Patents, Washington, DC 20231 on this date: 8-4-04

Typed or printed name	Eric A. LaMorte		
Signature		Date	8-4-04

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of: **Bossard**

Serial No.: **10/770,732**

Filing Date: **February 02, 2004**

: Group Art Unit: **unknown**

: Examiner: **unknown**

: Date: August 4, 2004

For: **COMPOSITE STRUCTURE FOR HIGH EFFICIENCY HYDROGEN SEPARATION AND ITS ASSOCIATED METHODS OF MANUFACTURE AND USE**

Assistant Commissioner of
Patents and Trademarks

INFORMATION DISCLOSURE STATEMENT

Sir:

In accordance with 37 C.F.R. § 1.56, applicant wishes to call the attention of the Examiner to the following references:

U.S. Patent No.:	Patentee:	Issue Date:
6,152,987	Ma	November 28, 2000
5,734,092	Wang	March 31, 1998
5,614,001	Kosaka	March 25, 1997
4,699,637	Iniotakis	October 13, 1987

U.S. Pat App. Pub No.		
2003/0190486	Roa	October 09, 2003

Publications

(1) Nanostructured thin palladium-silver membranes:
Effects of grain size on gas permeation properties
A. McCOOL, Y. S. LIN*

Department of Chemical Engineering, University of Cincinnati
Cincinnati, OH 45221-0171, USA
E-mail. Jlin@alpha.che.uc.edu

(2) A study on the palladium/nickel composite membrane by vacuum electrodeposition
Seung-Eun Nam, Kew-Ho Lee *
Membranes and Separation Research Center, Korea Research Institute of Chemical Technology, P.O. Box 107,
Yusung, Taejon 305-606, South Korea
Received I June 1999; received in revised form 28 September 1999,
accepted 15 November 1999

(3) Preparation of a palladium alloy composite membrane supported in a porous stainless steel by vacuum electrodeposition
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Membranes and Separation Center Korea Research Institute of Chemical Technology
PO Box 107, Yusung, Taejon 305-606, South Korea
Received 26 March 1998; received in revised form 26 March 1998; accepted 29 July 1998

(4) Defect-Free. Palladium Membranes on Porous
Stainless-Steel Support
Peter P. Mardilovich, Ying She, and Yi Hua Ma
Dept. of Chemical Engineering, Worcester Polytechnic Institute
Worcester, MA 01609
Min-Hon Rei, China Technical Consulting, Inc., Taipei, Taiwan, R.O.C.

(5) Fabrication of thin metallic membranes by MOCVD and sputtering
George Xomeritakis, Y.S. Lin*
Department of Chemical Engineering, University of Cincinnati
Cincinnati, OH 45221-0171, USA
Received 15 January 1997; received in revised form 31 March 1997; accepted 2 April 1997

(6) Structurally stable composite Pd-Ag alloy membranes:
Introduction of a diffusion barrier
J. Shu, A. Adnot, B.P.A. Grandjean *, S. Kaliaguine
Department of Chemical Engineering and CERPIC, Laval University
Quebec G1K 7P4, Canada
Received 26 July 1995; accepted 4 January 1996

(7) The relationship between intermetallic diffusion and
David J. Edlund , Jack McCarthy b
'Bend Research, Inc., 64550 Research Road, Bend, OR 97701-8599, USA
b Oregon Graduate Institute, P.O. Box 91000, Portland, OR 97291-1000, USA H.
Zuchner, HA. Schluter T. Rauf, and R. Hergemoller

Institut fur Physikalische Chemie der Universitat Munster, SchloBplatz 4, W-4000 Munster

(8) Synthesis and hydrogen permeation properties of ultrathin palladium - silver alloy membranes
V. Jayaraman, Y.S. Lin *
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(9) Nanostructured palladium membrane synthesis by magnetron sputtering
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(10) Properties of Thin Palladium-Films and Their Hydrogen-Permeability
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Institut fur Physikalische Chemie der Universitat Munster, SchloBplatz 4, W-4000 Munster

(11) Morphological changes of Pd-Ag membranes upon hydrogen permeation
JOURNAL OF MATERIALS SCIENCE LETTERS 16 (1997) 294--297
J. SHU, B. E. W. BONGONDO, B. P. A. GRANDJEAN, S. KALIAGUINE
Department of Chemical Engineering, Laval University, Quebec, Canada G1K 7P4

Copies of these references are submitted herewith along with form PTO-1449.

The listed references relate to hydrogen purification systems that use palladium barriers. The relevance of some of these patents is discussed in the above-referenced patent application. The relevance of other references are explained below. References that are not cited in the application or explained below are cited for the purposes of background information only.

U.S. Patent Application Publication Number 2003/0190486 to Roa discloses a hydrogen separation system where a solid palladium alloy is applied to a substrate of dissimilar material. The substrate is a ceramic or metal and does not contain palladium.

The document entitled *"A Study On The Palladium/Nickel Composite Membrane By Vacuum Electrodeposition"* by Seung-Eun Nam, Kew-Ho Lee discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is mesoporous stainless steel.

The document entitled *"Fabrication Of Thin Metallic Membranes By MOCVD And Sputtering"* by George Xomeritakis, Y.S. Lin* discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is macroporous aluminum oxide.

The document entitled *"Nanostructured Palladium Membrane Synthesis By Magnetron Sputtering"* by Kenneth J. Bryden, Jackie Y. Ying* discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is porous alumina

The document entitled *"The Relationship Between Intermetallic Diffusion And Flux Decline In Composite-Metal Membranes"* by David J. Edlund and Jack McCarthy discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is a vanadium based metal layer.

The document *Entitled "Nanostructured Palladium Membrane Synthesis By Magnetron Sputtering"* by Kenneth J. Bryden and Jackie Y. Ying discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is a Vycor glass substrate.

The document entitled *"Preparation Of A Palladium Alloy Composite Membrane Supported In A Porous Stainless Steel By Vacuum Electrodeposition"* by Seung-Eun Nam, Sang-Hak Lee, Kew-Ho Lee discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is porous stainless steel.

The document entitled *"Structurally Stable Composite Pd-Ag Alloy Membranes: Introduction Of A Diffusion Barrier"* by J. Shu, A. Adnot, B.P.A. Grandjean , and S. Kaliaguine, discloses the formation of a palladium alloy on a substrate of dissimilar material. The substrate is porous stainless steel.

The citation of these patents does not constitute an admission that these references are relevant or material to the claims; they are cited only as constituting the closest art of which the applicant is aware.

Respectfully submitted,

Date: 8-4-04

Eric A. LaMorte, Esq.
Reg. No. 34,653
Attorney for Applicant

Form PTO-1449	U.S. Department of Commerce Patent and Trademark Office	Atty. Docket No. **BOSSARD -9**	Serial No **10/770,732**
INFORMATION DISCLOSURE CITATION (Use several sheets if necessary)		Applicant **Bossard**	
		Filing Date **02/02/2004**	Group

U. S. PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Sub-class	Filing Date If Appropriate
	AA	6 1 5 2 9 8 7	11/28/00	Ma et al.	95	56	
	AB	5 7 3 4 0 9 2	03/31/98	Wang	73	23.25	
	AC	5 6 1 4 0 0 1	03/25/97	Wang	96	10	
	AD	4 6 9 9 6 3 7	10/13/87	Iniotakis	55	158	
	AE						
	AF						
	AG						
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

*Examiner Initial		Document Number	Date	Name	Class	Sub-class	Translation	
							Yes	No
	AL							
	AM							
	AN							
	AO							
	AP							

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Page, Etc.)

	AR		U.S. Pat App Pub No. 2003/0190486 to Roa, filed 04/03/2003
	AS		See Attached List of Professional Papers (11) references
	AT		

Examiner	Date Considered

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

(1) Nanostructured thin palladium-silver membranes:
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